

METHOD, SYSTEM, AND PROGRAM FOR A NETWORK PROTOCOL PROCESSOR

S. R. Vangal et al.

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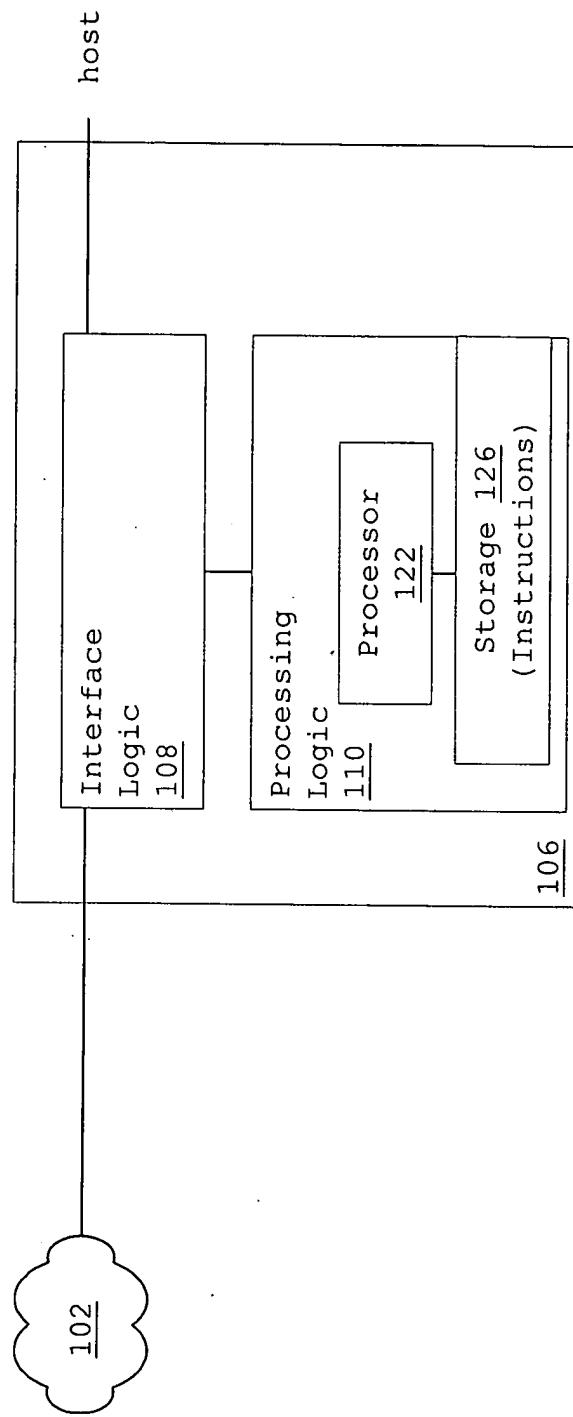


FIG. 1

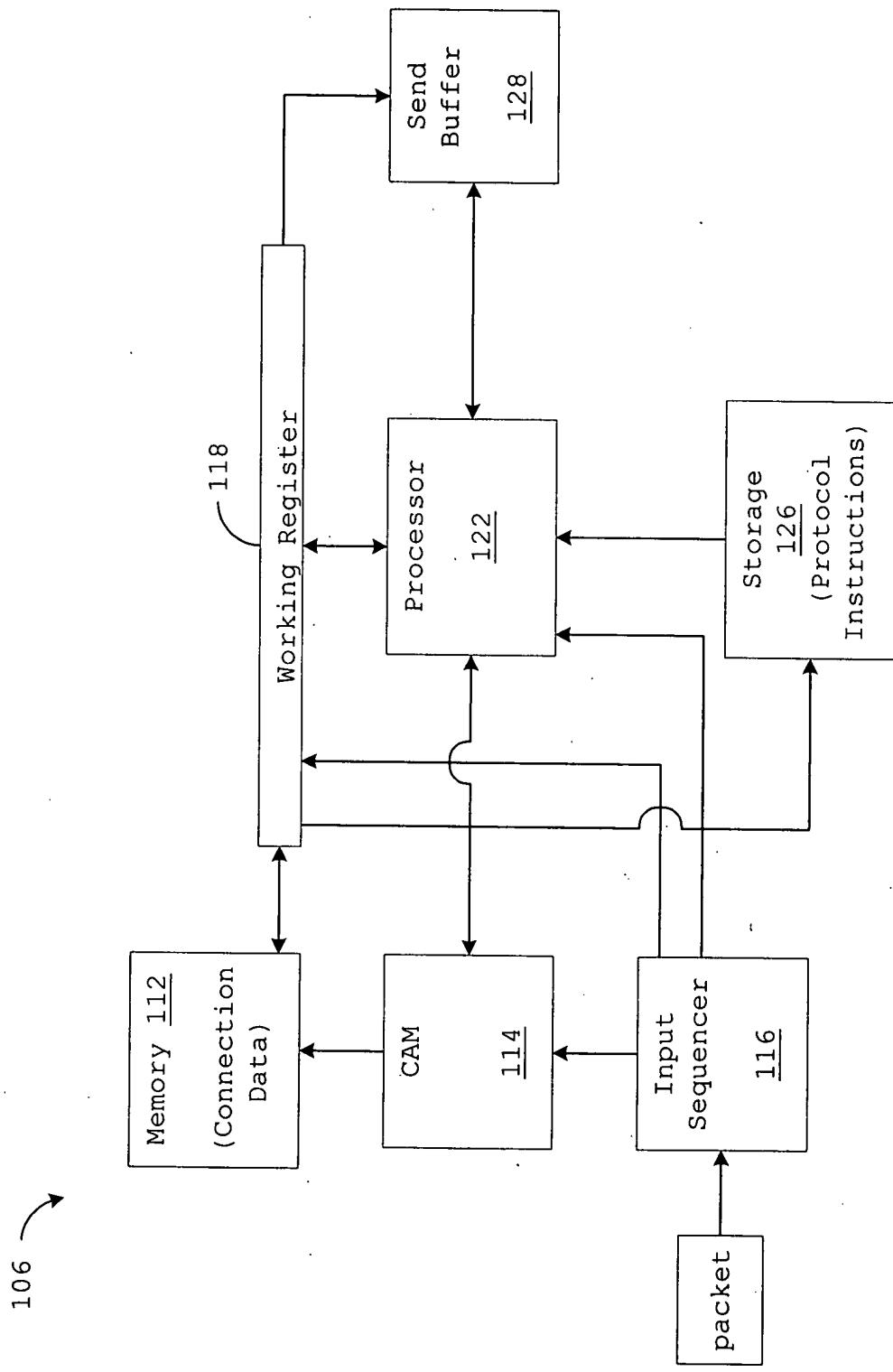


FIG. 2

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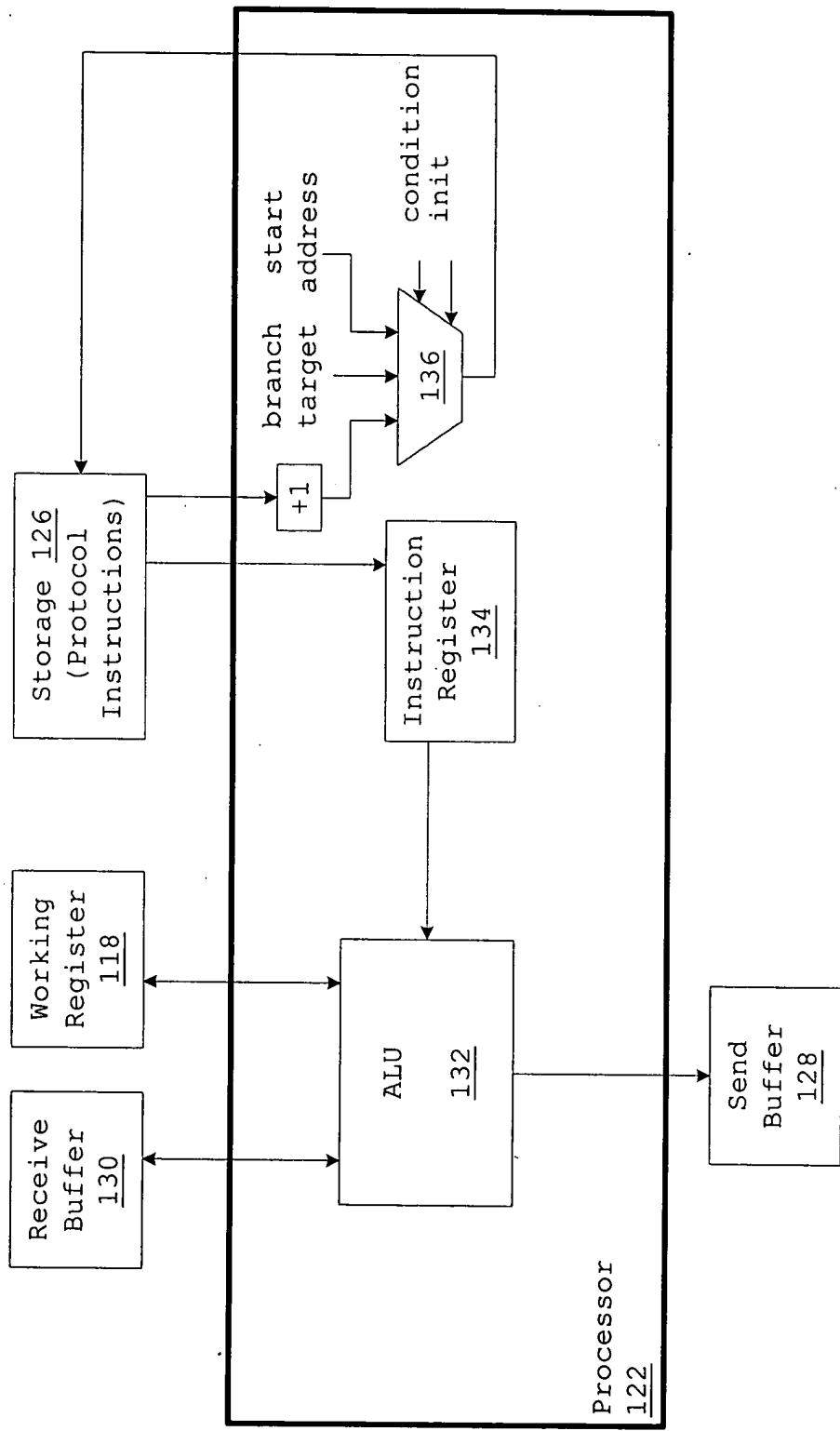


FIG. 3

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Instruction	Operands
LOAD	regA <-- data
MOV	regA --> regB
AND / OR	regA regB --> cond
ADD / SUB	regA regB --> regC
CMP / EQUAL	regA regB --> cond
NOT	regA --> regC
BREQZ / BRNEQZ / JMP	label
SHL2	regA
CAM1CLR	index
TCBWR	index

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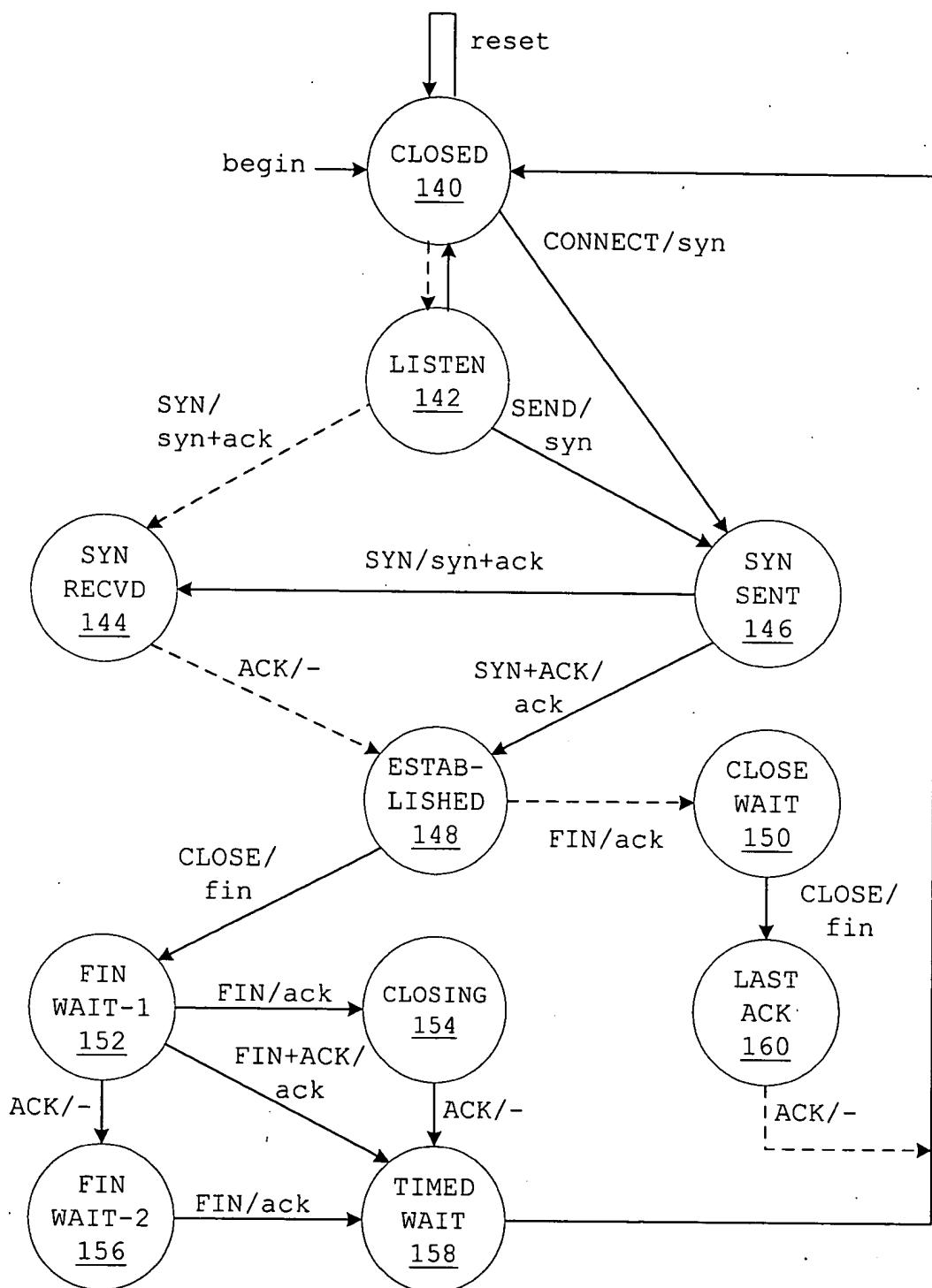


FIG. 5 (PRIOR ART)

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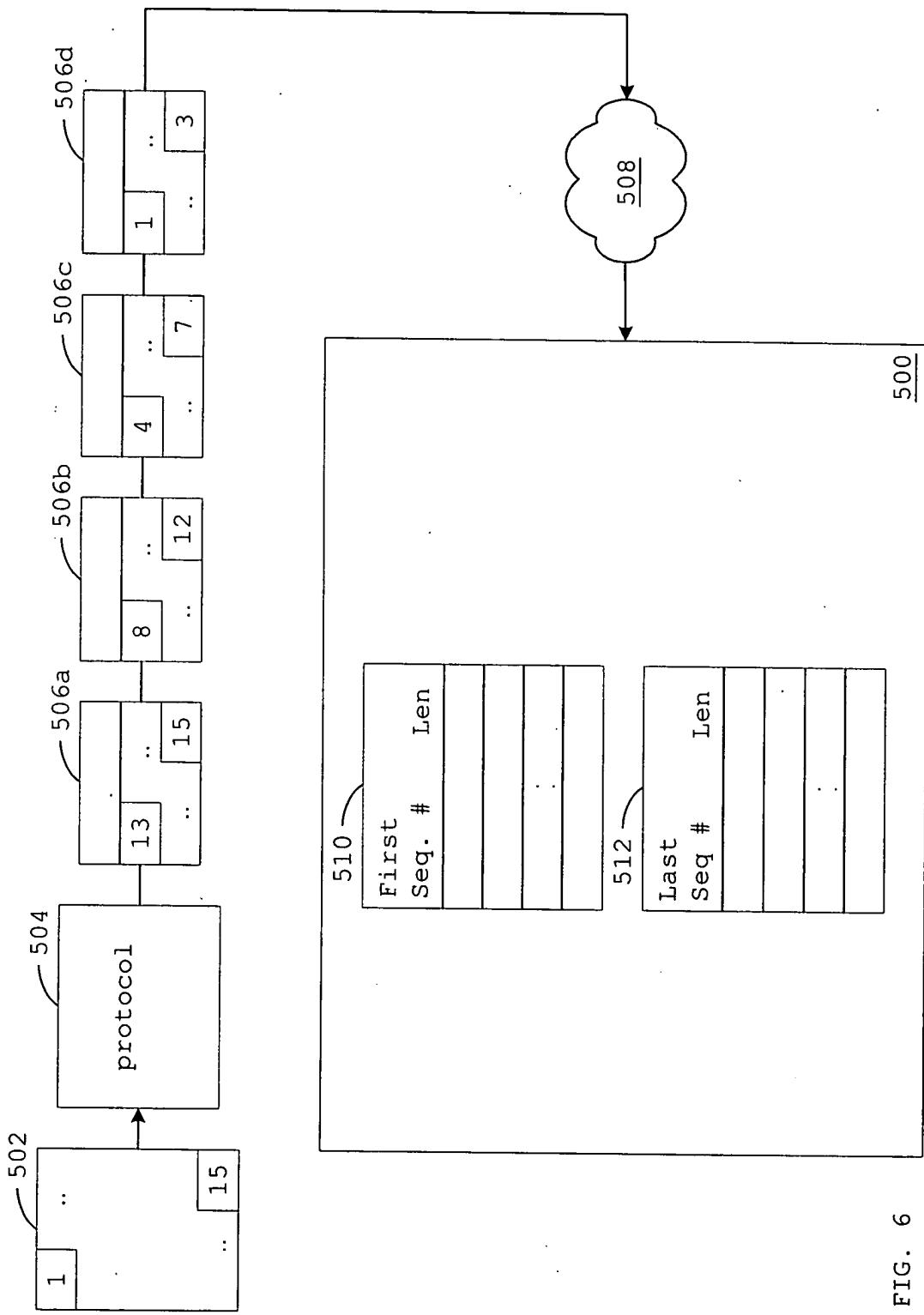


FIG. 6

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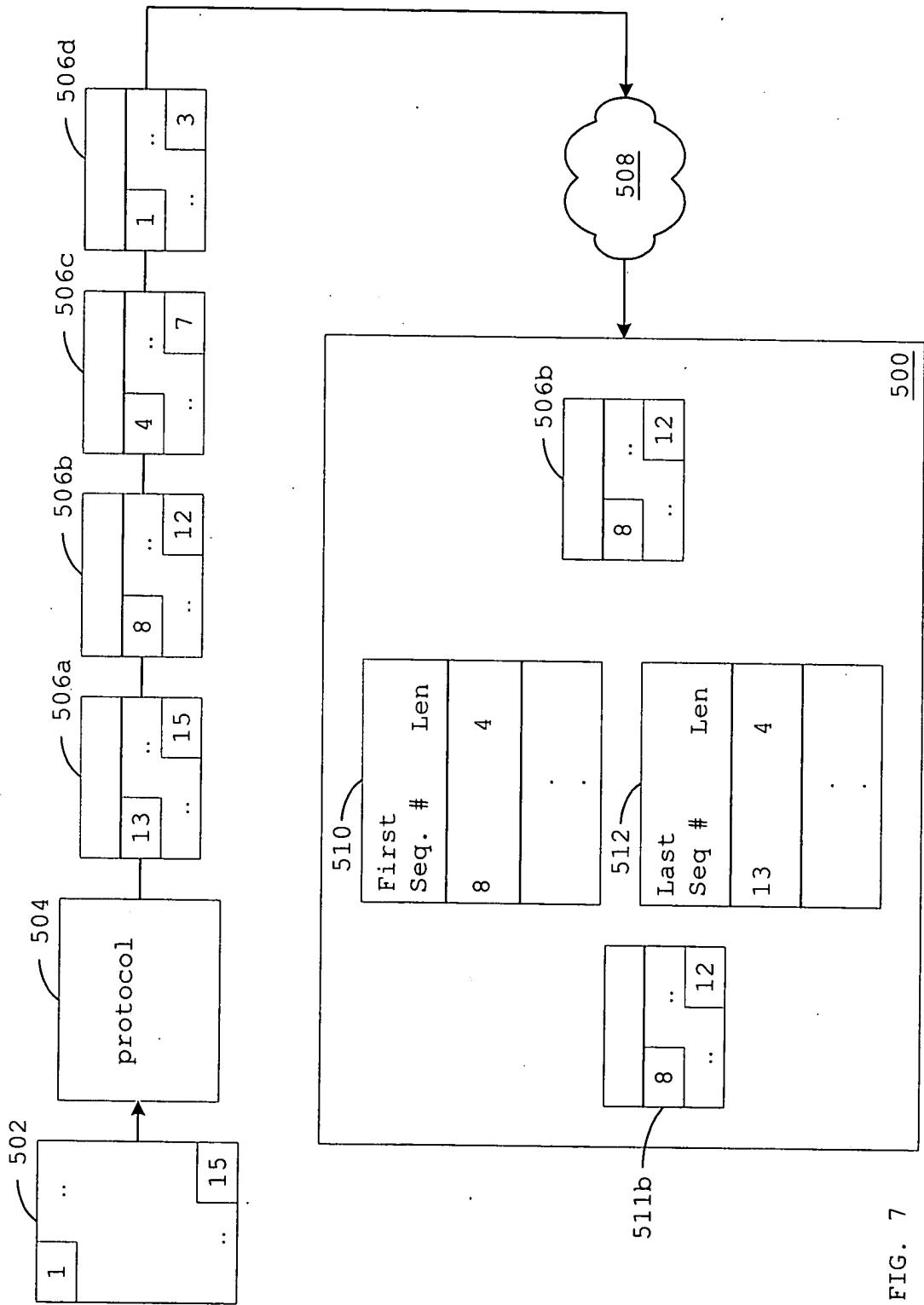


FIG. 7

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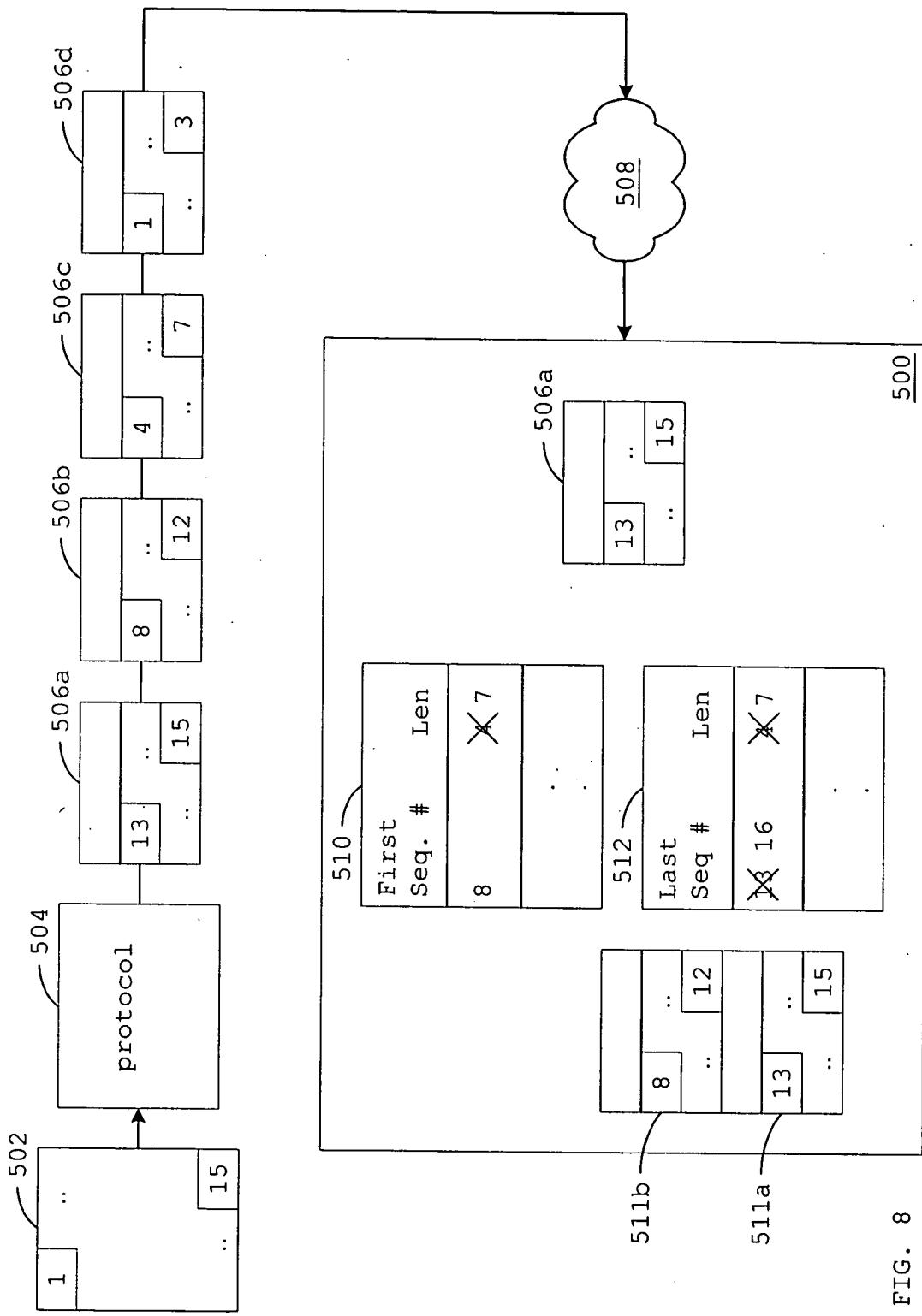


FIG. 8

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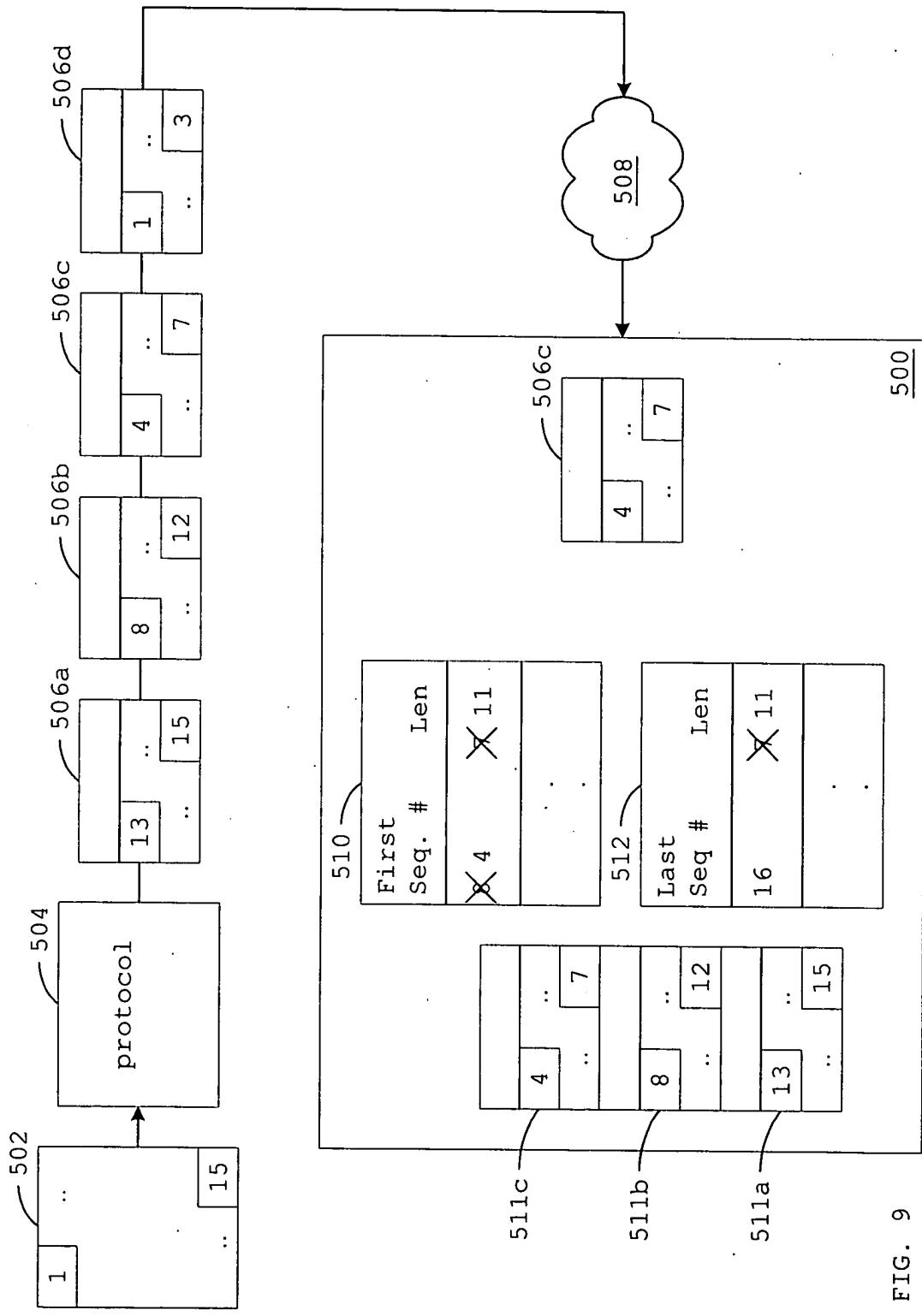


FIG. 9

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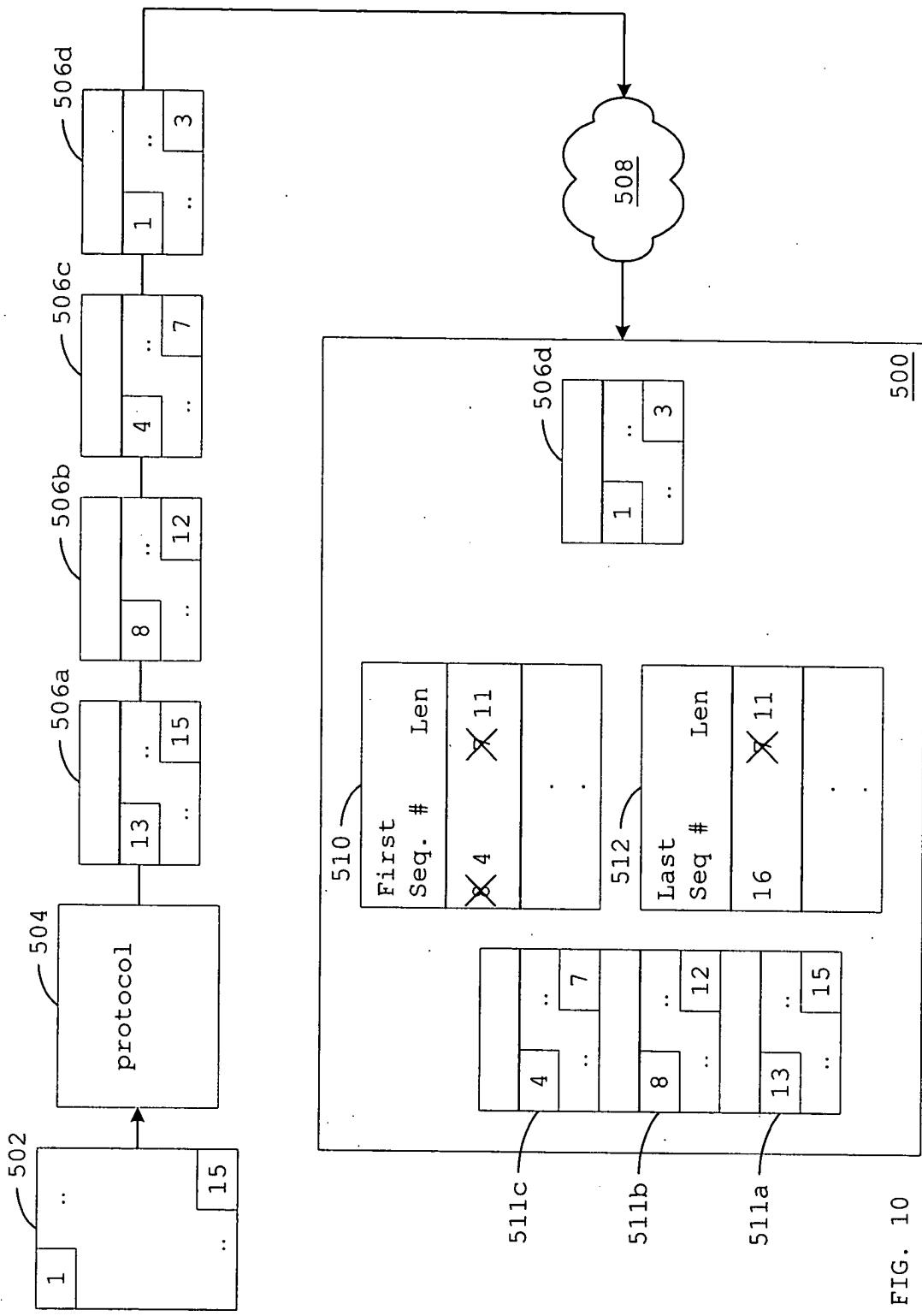


FIG. 10

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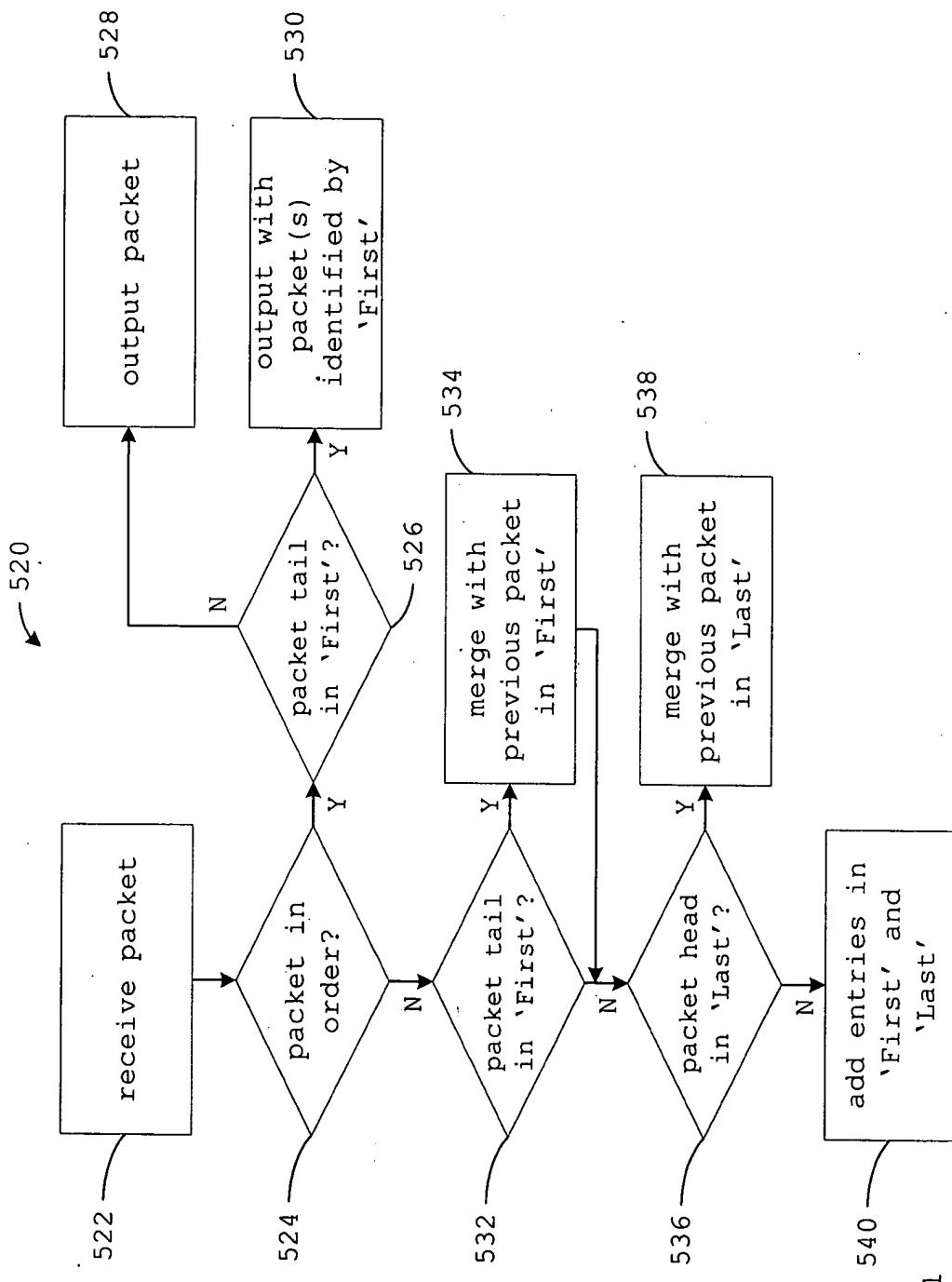


FIG. 11

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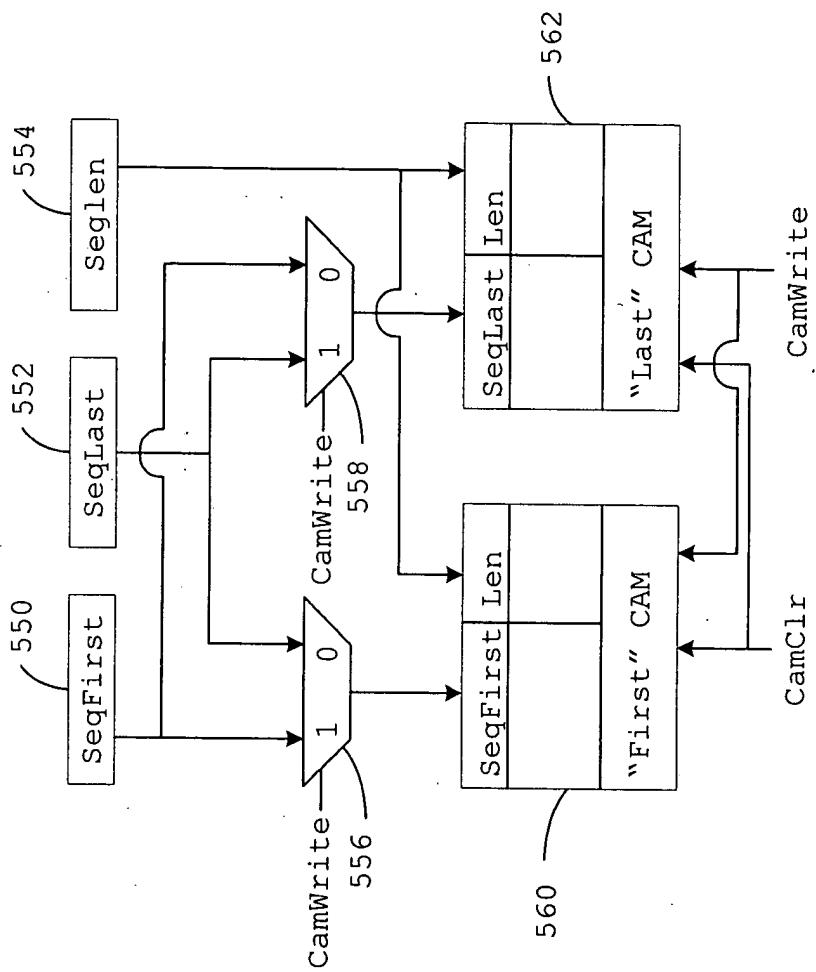


FIG. 12

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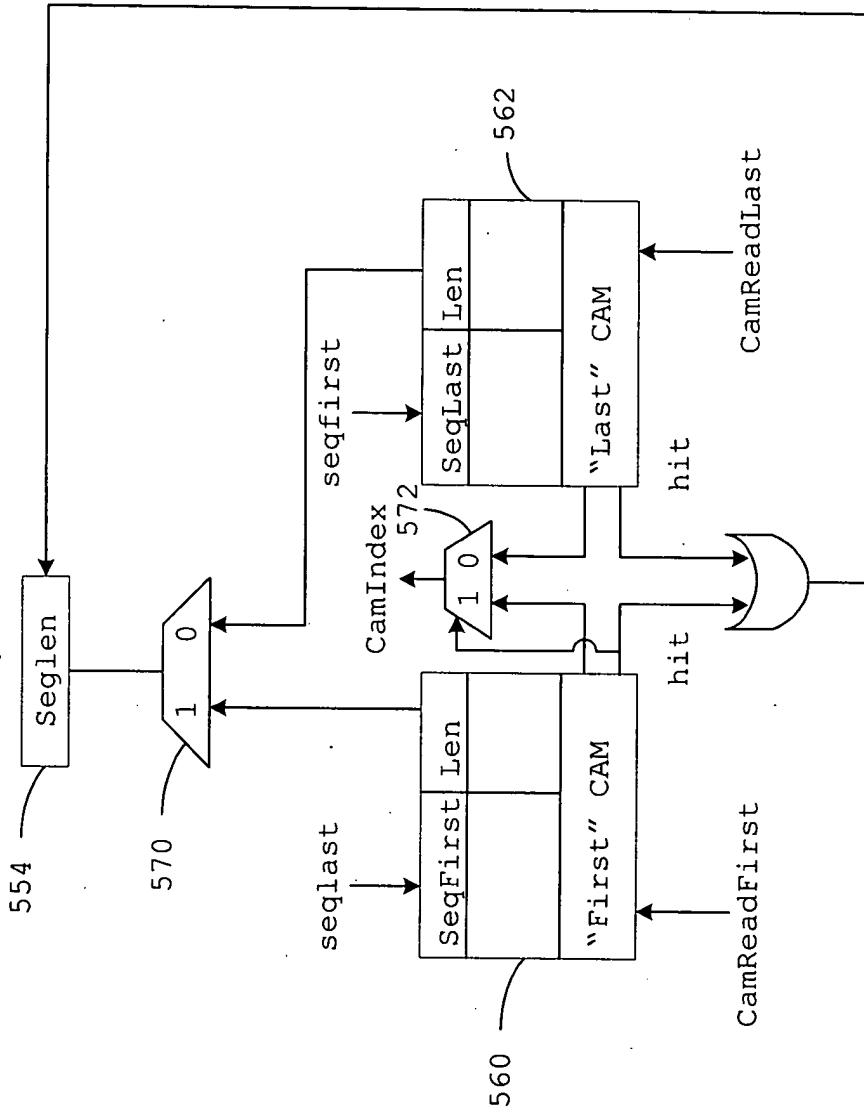


FIG. 13

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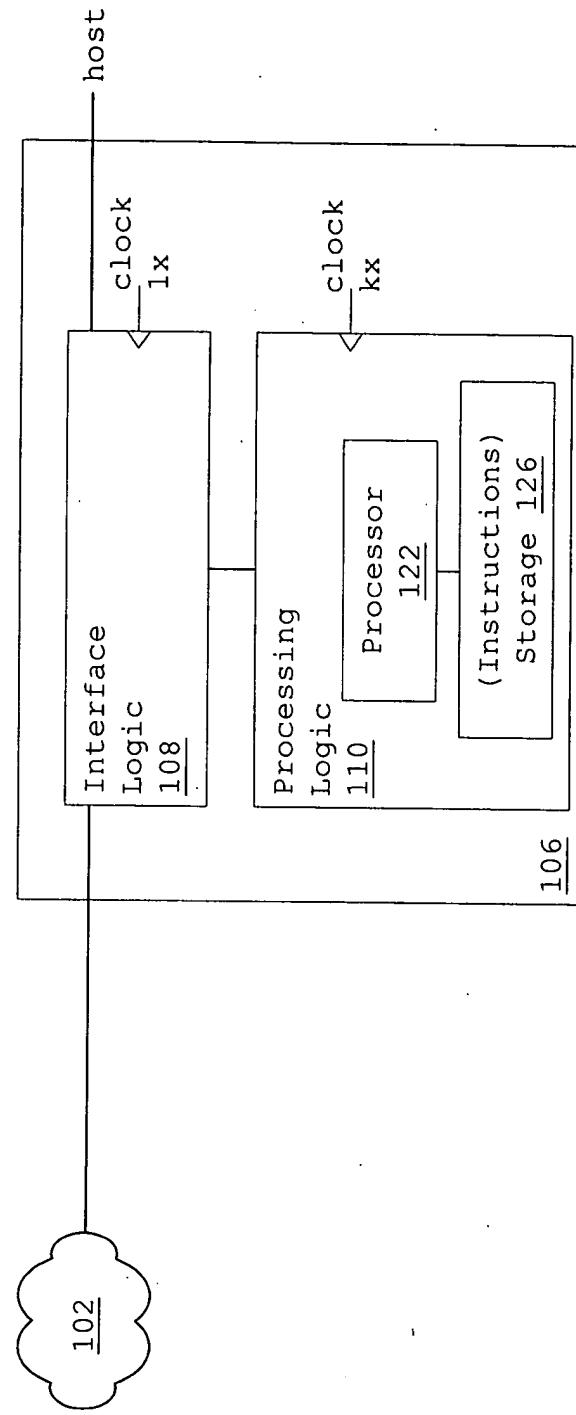


FIG. 14

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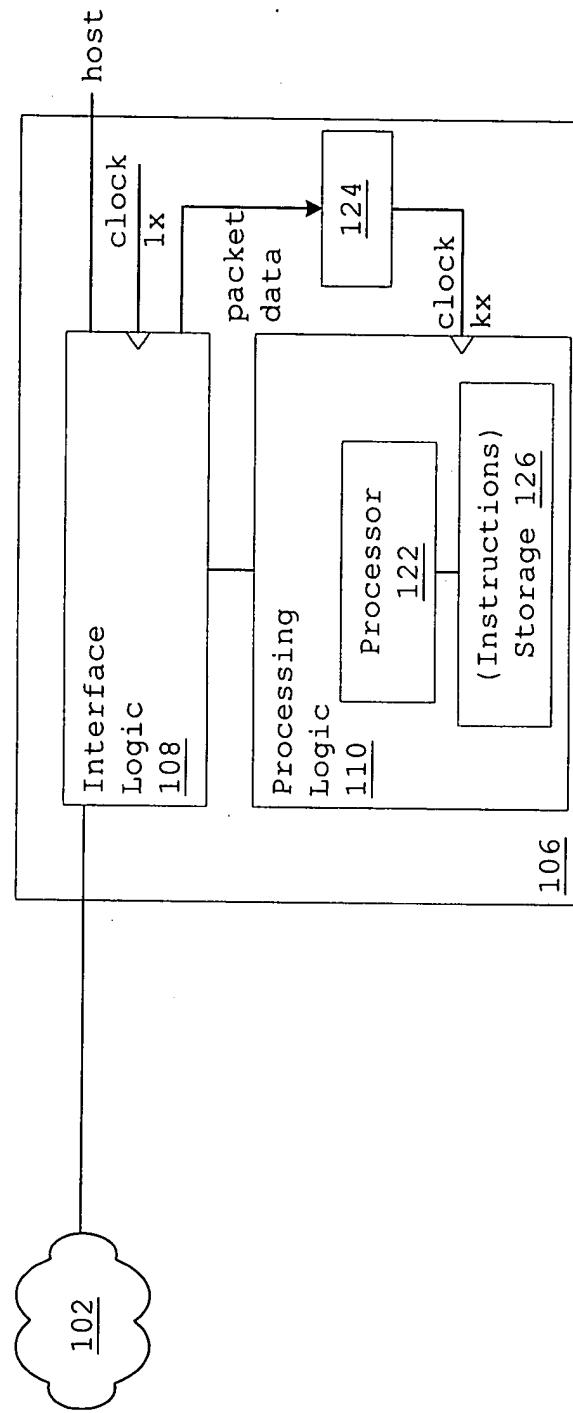


FIG. 15

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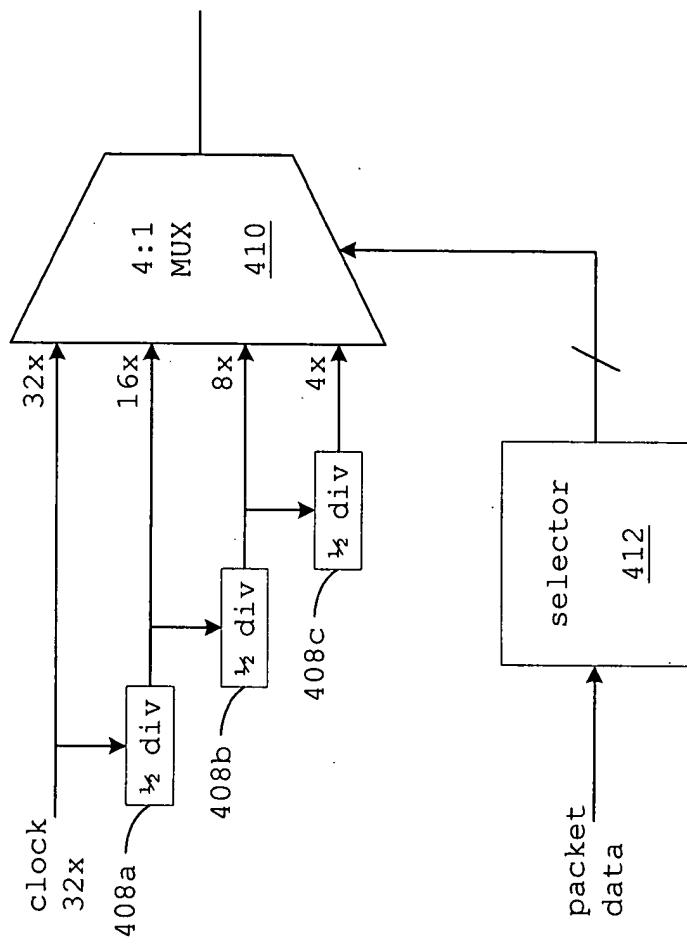


FIG. 16

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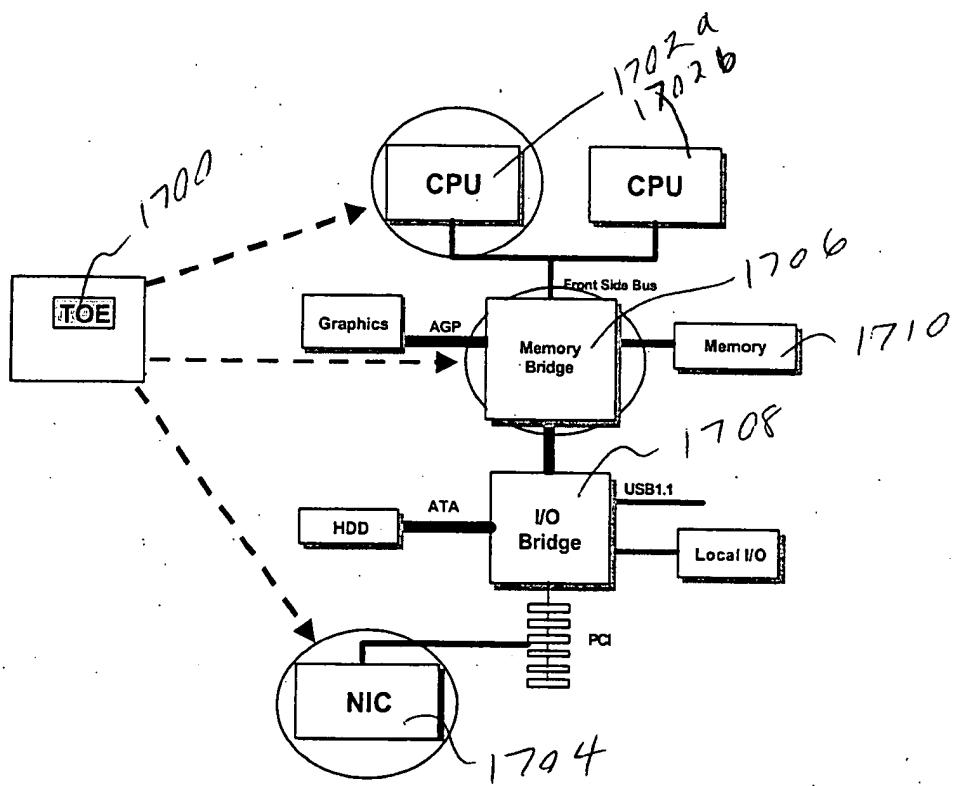


FIG. 17 A

NETWORK PROTOCOL PROCESSOR

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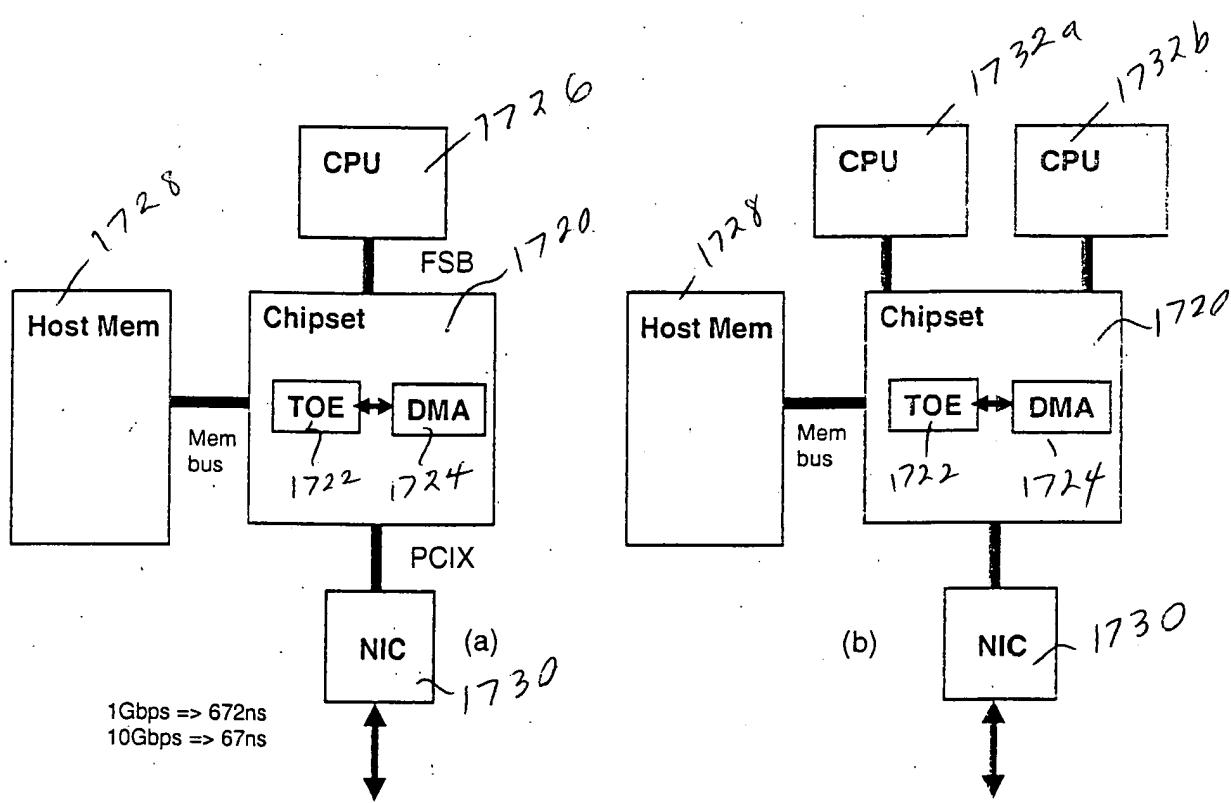


FIG. 17 B

FIG. 17 C

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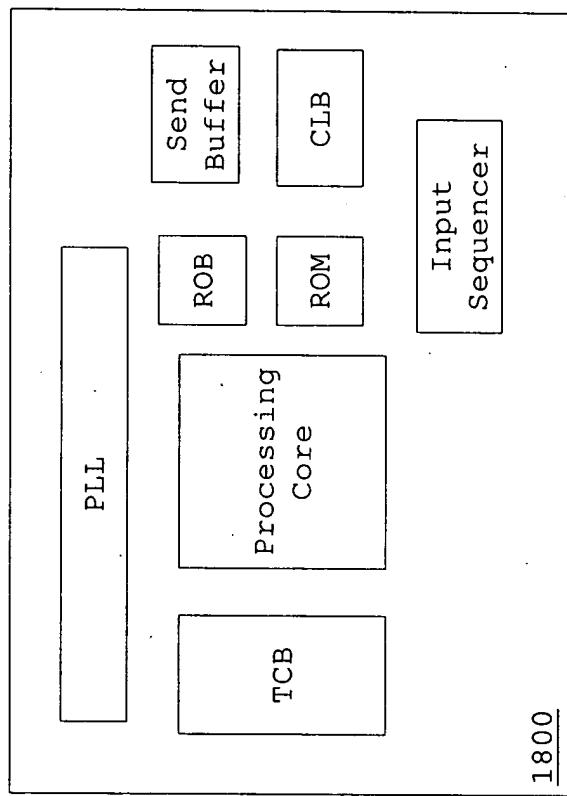
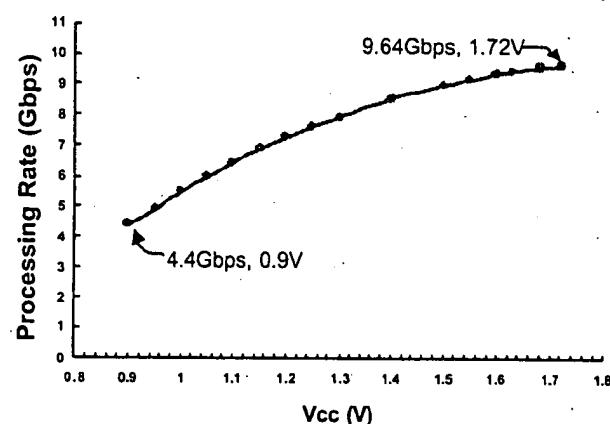


FIG. 18

FIG. 19 A

1900



1910

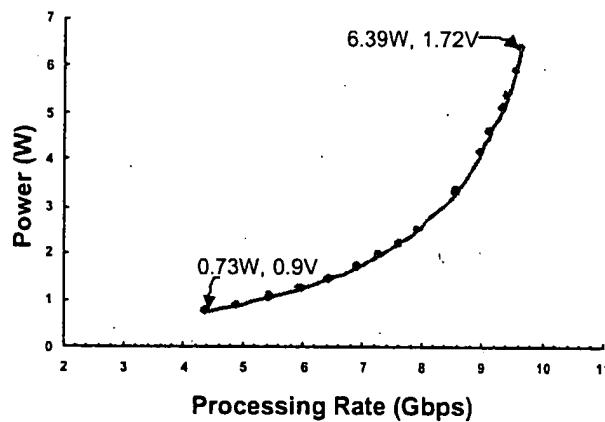


FIG. 19 B

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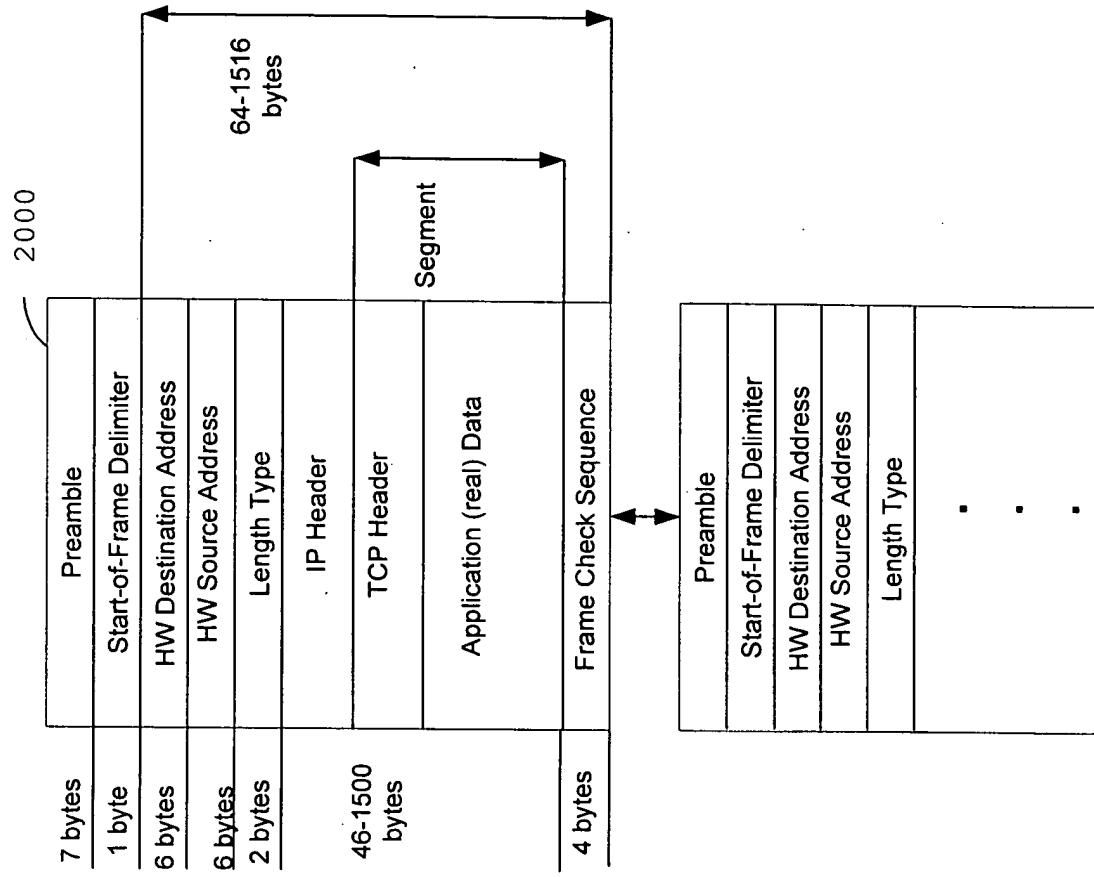


FIG. 20

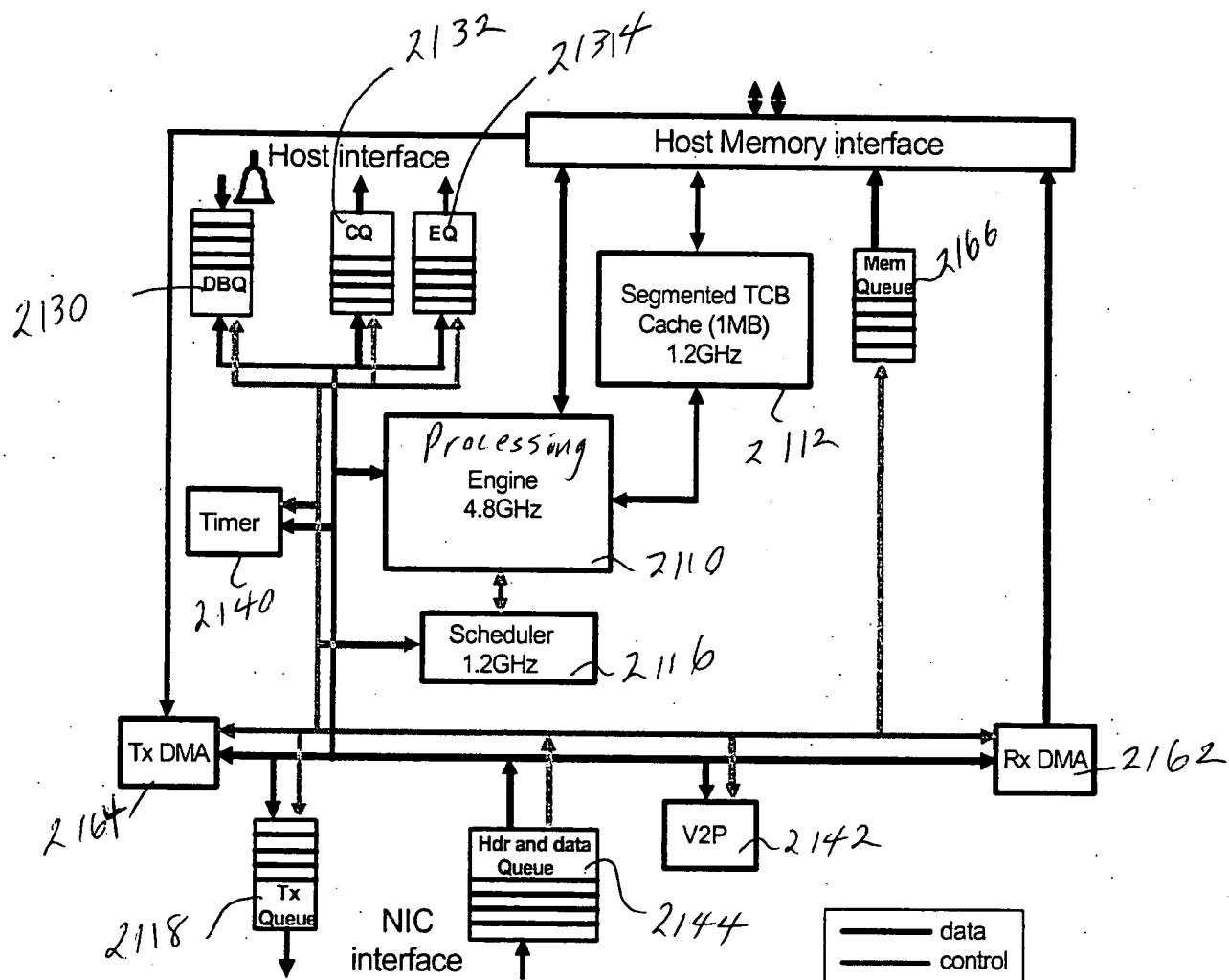
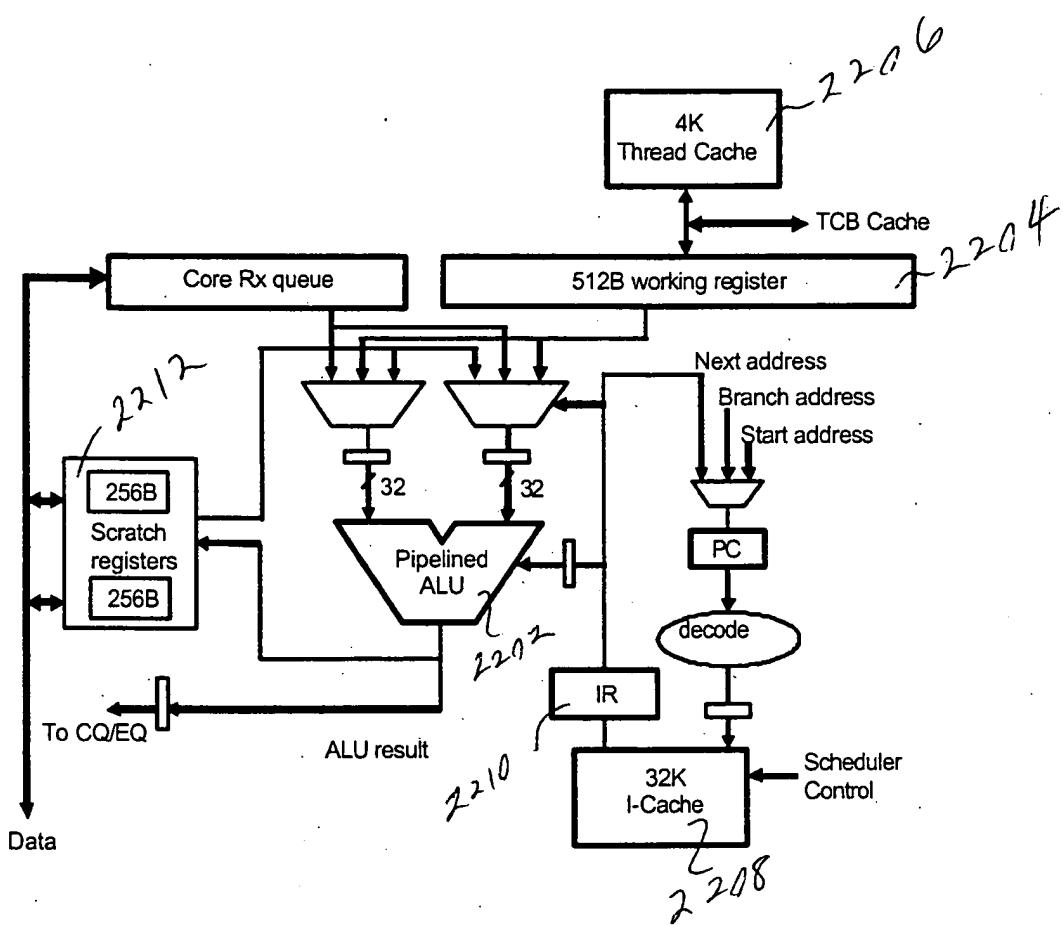


FIG. 21

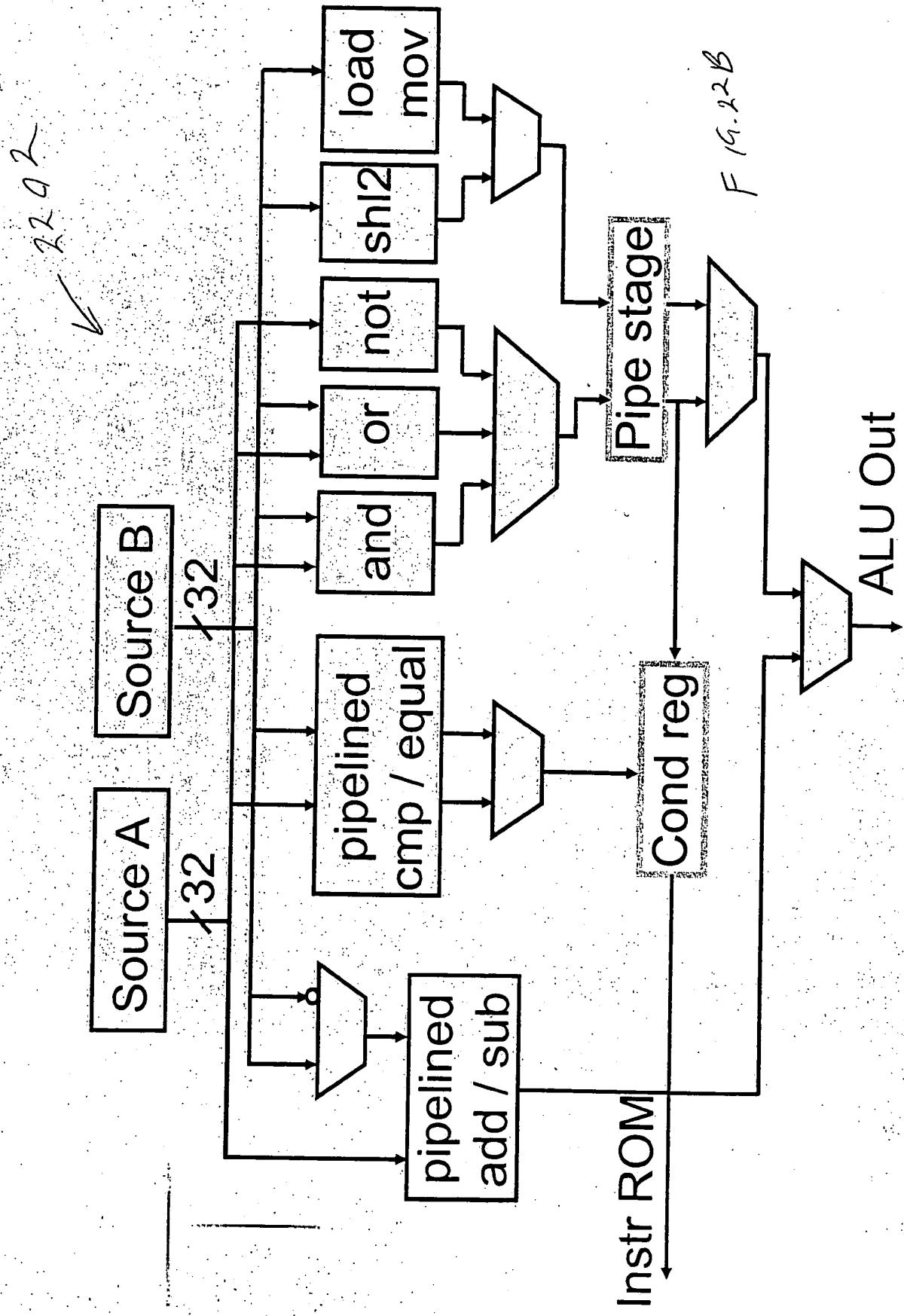
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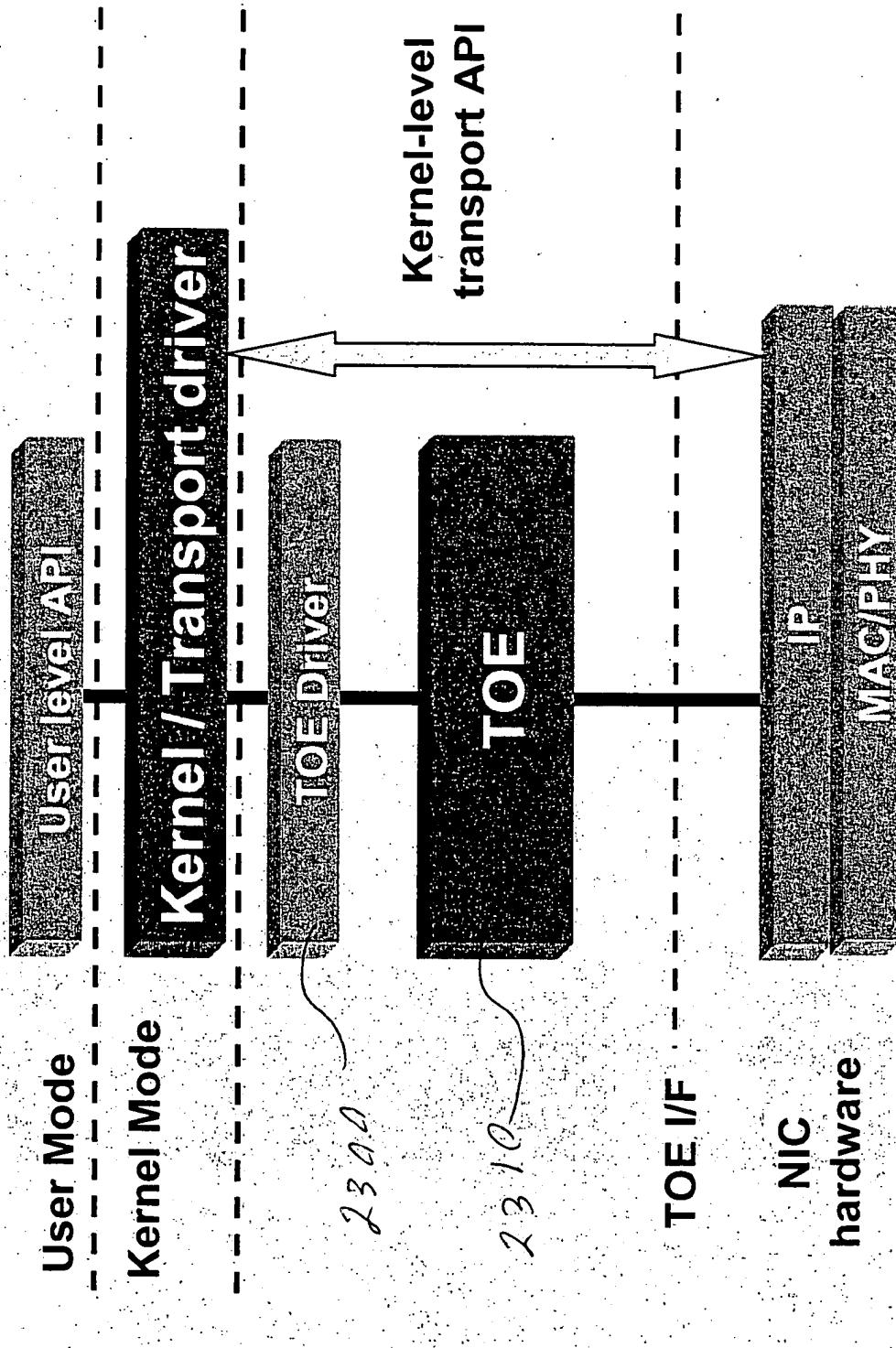


F16-22 A



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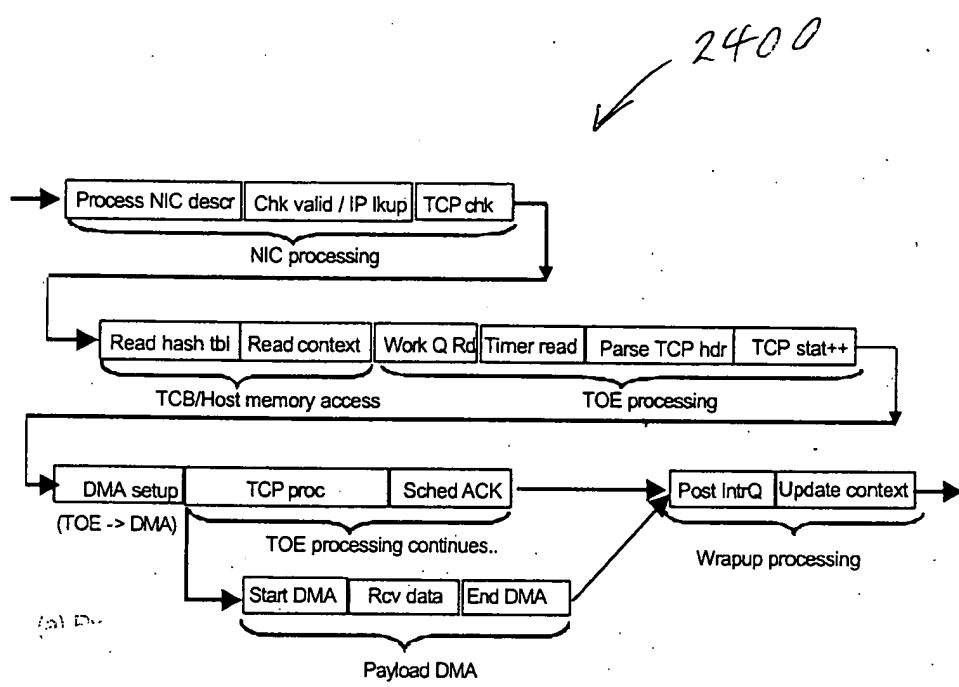
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F16- 24A

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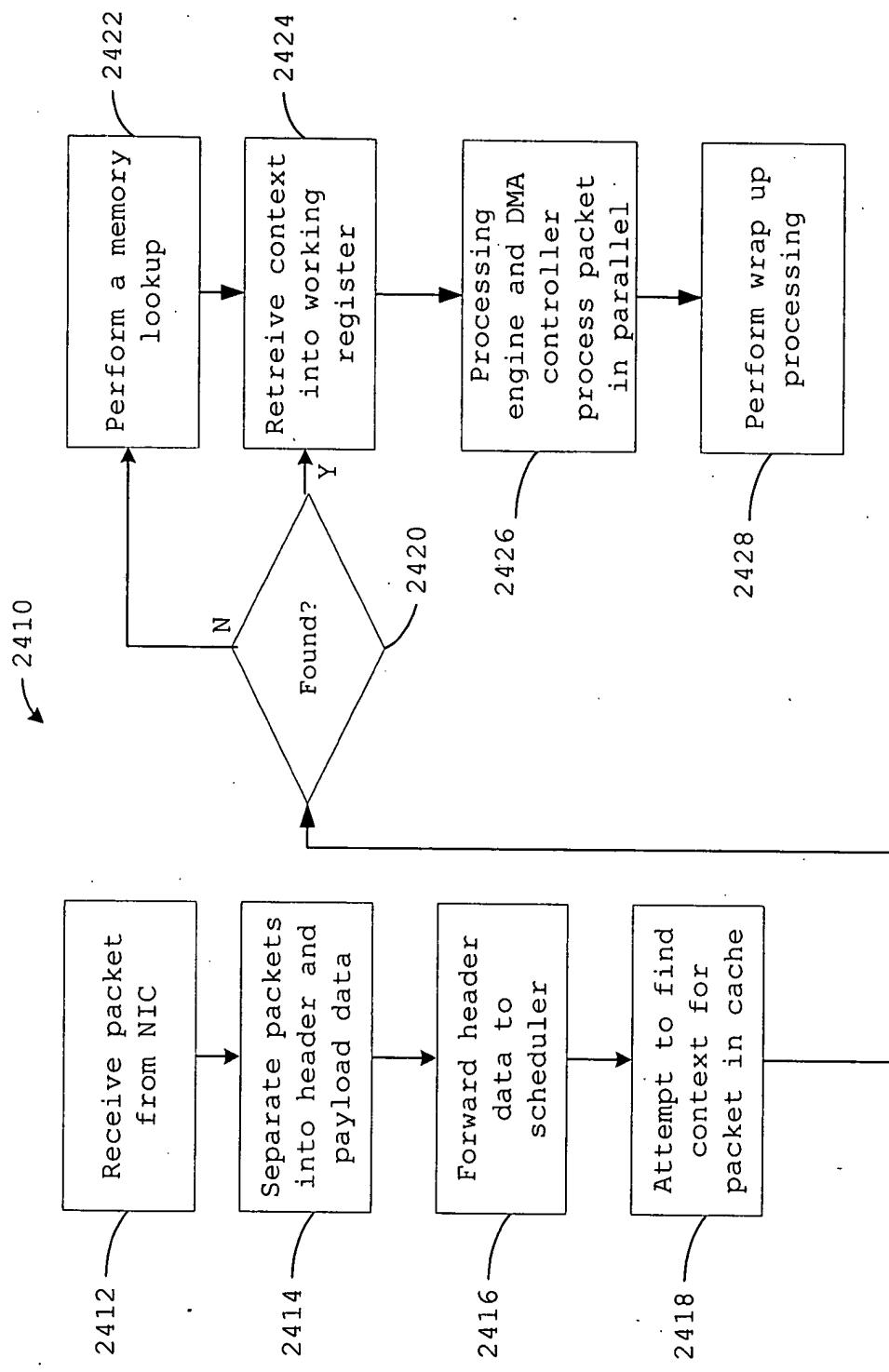


FIG. 24B

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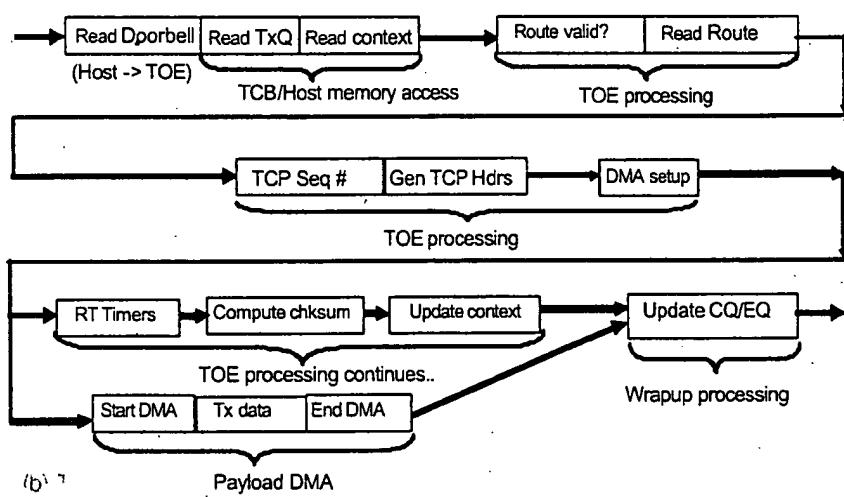


FIG-24C

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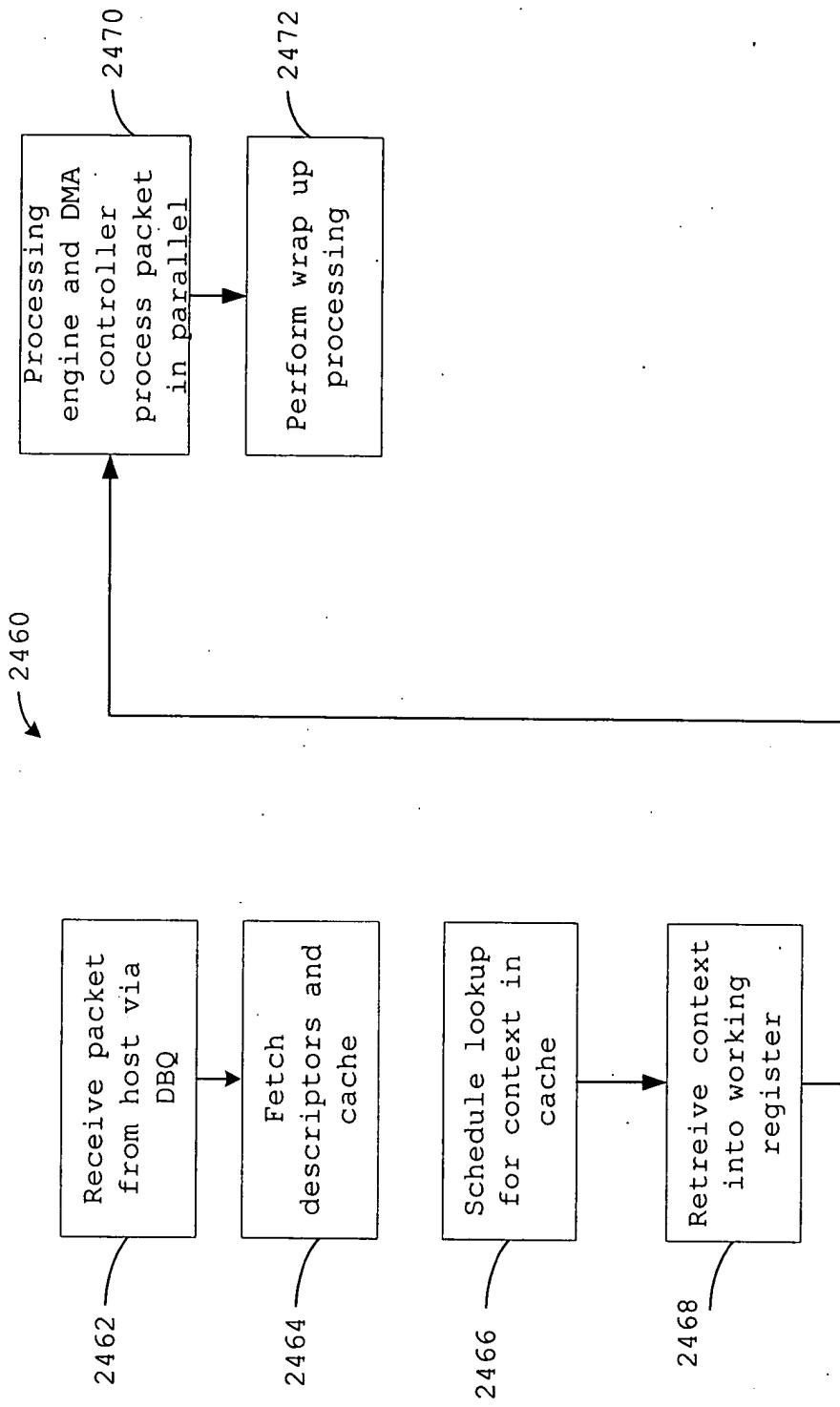


FIG. 24D

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General purpose

LOAD A ← data
MOV A → B
AND A B → cond
OR A B → cond
ADD A B → C
SUB A B → C
CMP A B → cond
EQUAL A B → cond
NOT A → C
BREQZ / BRNEQZ label
JMP label
SHL2 A
NOP

Special purpose

Category	Instructions
Context access	TCBRD, TCBWR
Hashing	HSHLKP, HSHUPDT
Multi-threading	THRDSV, THRDRST
DMA commands	DMATX, DMARX
Timers	TIMERRD, TIMERRW
Network to host byte order	HTONS, HTONL, NTOHL, NTOHS

2510

FIG-25A

FIG-25B

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FIG. 26A

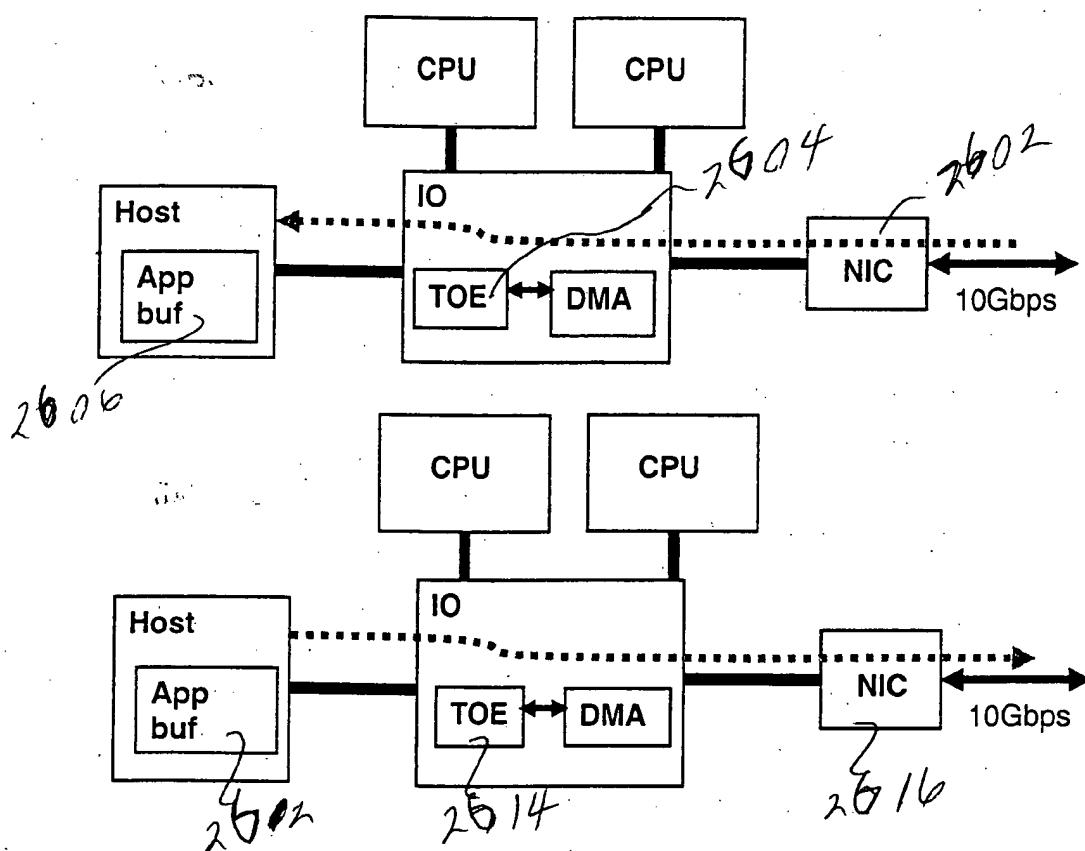


FIG. 26B

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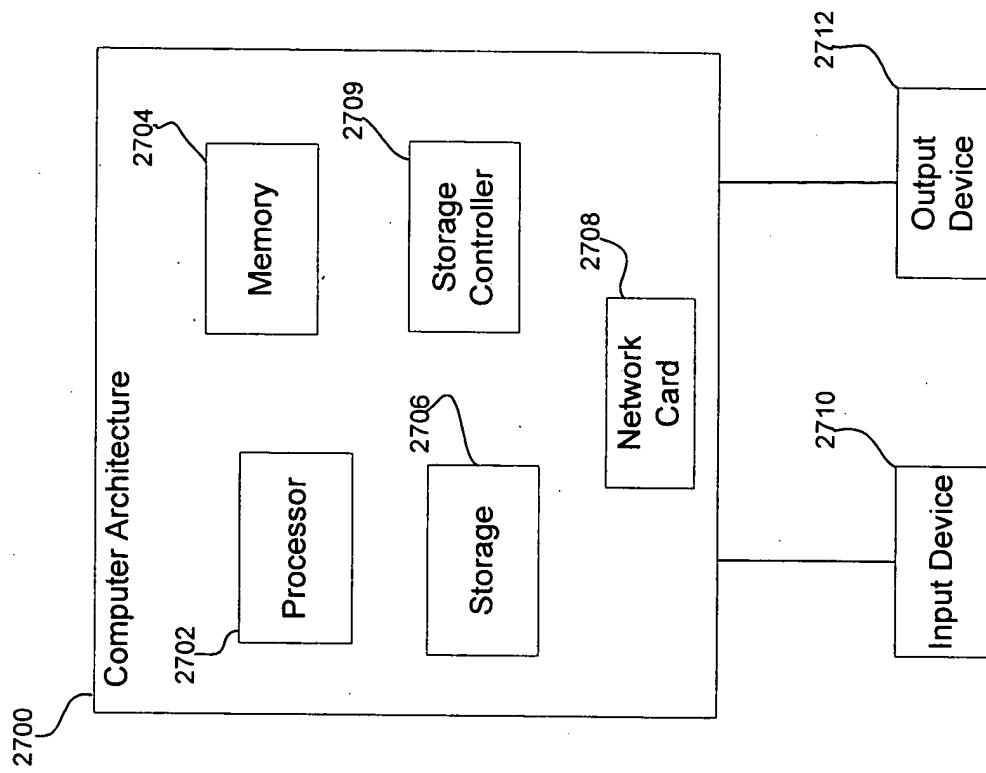


FIG. 27